

Facility: Monticello Scenario No.: NRC Scenario **1** Op-Test No.: MNGP 2010
 Examiners: _____ Operators: _____

Initial Conditions: 100% Power
 HPCI is Inoperable
 #12 CRD Pump Inop
Turnover: Shift RBCCW Pumps

Event No.	Malf. No.	Event Type*	Event Description
1	None	N BOP	BOP shifts RBCCW pumps.
2	NI13C	I ATC/SRO	APRM #3 fails upscale. With the updated nuclear instrumentation, a 1/2 scram does not occur. Tech Specs are referenced and APRM #3 is Bypassed. (TS)
3	RC02 02-S17-04 (Ovrđ)	C BOP/SRO	Inadvertent RCIC start. The trip pushbutton will also fail to shutdown RCIC, requiring an alternate shutdown method (TS) (ABN)
4	04-A2S70-04 (Ovrđ)	C BOP/SRO	EPR Failure. The MPR starts controlling but must be adjusted lower to maintain Core Thermal Power within limits. (ABN)
5	CH01_65	C ATC/SRO	Rod Drift Out (42-27). The rod is inserted, declared inoperable, and disarmed. (ABN)
6	TU03 G, H, & I	R ATC/SRO	Turbine bearing vibrations begin to increase. Rapid Power Reduction is performed in response. (ABN)
7	RR01B	M Crew	A small leak begins inside the Drywell. EOP 1200 is performed with no further challenges. EOP 1100 is entered. Alternate Level Control actions are performed when the Feed Pumps and RCIC fail. Emergency Depressurization is performed and RPV level is restored with low pressure systems.

(N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

ES-301-4 Quantitative attributes:
 Total Malfunctions (5-8): **6**
 Malfunction(s) after EOP (1-2): **1**
 Abnormal Events (2-4): **E3, E4, E5, E6**
 Major Transient(s) /E-Plan entry (1-2): **E7**
 EOPs (1-2): **1100 & 1200**
 EOP Contingencies (0-2): **2 (ALC, ED)**
 Critical Tasks (2-3): **2**

ES-301-5 Quantitative attributes:
 BOP Normal: **E1**
 ATC Reactivity (1 per set): **E6**
 BOP I/C (4 / set): **E3 & 4**
 ATC I/C (4 / set): **E2 & 5**
 SRO-I I/C (4 / set inc 2 as ATC): **E2, 3, 4, & 5**
 SRO Tech Spec (2 per set): **E2, E3, E5**
 ALL Major Transients (2 per set): **1**

Facility: Monticello Scenario No.: NRC Scenario **2** Op-Test No.: MNGP 2010
 Examiners: _____ Operators: _____

Initial Conditions: 100% Power
Turnover: #12 Service Water Pump Out of Service

Event No.	Malf. No.	Event Type*	Event Description
1	None	N BOP	Shutdown of the Hydrogen Seal Oil Vacuum Pump
2	NI15A	I ATC/SRO	One channel of the RBM fails downscale. (TS)
3	SW01A	I BOP/SRO	Trip of the running RBCCW Pump, Manual Start of Standby Pump.(ABN) The momentary loss results in a loss of RWCU. (ABN)
4	None	TS SRO	ECCS Room Fan found inoperable. (TS)
5	MC04B MC03	C BOP/SRO	Loss of Main Condenser Vacuum due to SJAE controller problems. (ABN)
6	None	R ATC/SRO	Rapid Power Reduction is performed due to loss of vacuum. (ABN)
7	MC03 CH16 CH19	M Crew	An air leak into the condenser results in a severe loss of vacuum. When the Turbine trips, a Hydraulic ATWS is identified. EOP 1100 and 2007 are performed. Because the loss of vacuum results in the main condenser as a heat sink, Power Level Control must be performed and SRVs must be used to stabilize RPV Pressure. The scenario may be stopped when Control Rods have been inserted an/or RPV level has been restored.
8	SL01A/B	C ATC	When SBLC injection is initiated, the first SBLC Pump selected will not start. The ATC must identify this failure and start the alternate SBLC Pump.

(N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

ES-301-4 Quantitative attributes:
 Total Malfunctions (5-8): **5**
 Malfunction(s) after EOP (1-2): **2**
 Abnormal Events (2-4): **4**
 Major Transient(s) /E-Plan entry (1-2): **E7**
 EOPs (1-2): **1100, 2007, 1200**
 EOP Contingencies (0-2): **PLC**
 Critical Tasks (2-3): **3**

ES-301-5 Quantitative attributes:
 BOP Normal: **E1**
 ATC Reactivity (1 per set): **E6**
 BOP I/C (4 / set): **E3 & 5**
 ATC I/C (4 / set): **E2 & 8**
 SRO-I I/C (4 / set inc 2 as ATC): **E2 & E5**
 SRO Tech Spec (2 per set): **E2 & 4**
 ALL Major Transients (2 per set): **E7**

Facility: Monticello Scenario No.: NRC Scenario **3** Op-Test No.: MNGP 2010
 Examiners: _____ Operators: _____

Initial Conditions: 46% Power, normal shutdown in progress
 12 Core Spray Pump Out of Service
Turnover: Secure #11 RFP then continue inserting control rods for shutdown

Event No.	Malf. No.	Event Type*	Event Description
1	None	N BOP	Secure #11 RFP.
2	None	R ATC/SRO	Insert control rods for shutdown.
3	CH07B	I ATC/SRO	While inserting control rods, the in-service CRD FCV will fail, requiring a shift to the alternate FCV.
4	SL02A	TS SRO	Loss of continuity to one SBLC Squib valve. (TS)
5	01-DS085-02 01-DS084-02	(TS only) SRO	(Optional) A Core Spray becomes inoperable when the Inboard Inject valve is found deenergized (TS)
6	ED06B	C BOP/SRO	(Optional) Loss of Turbine Bldg Load Center 102 (ABN)
7	CH08A CH08B	I ATC/SRO	11 CRD Pump trip / restore with 12 CRD Pump / 12 CRD Pump trip (ABN). Immediate Reactor Shutdown (ABN)
8	CH22A CH22B 03-S45-04	M Crew	Loss of both CRD pumps. Manual scram for 2 nd accumulator (CT) and performs EOP 1100. In-Plant personnel begin reporting indications of leak in the Scram Discharge Volume. The Scram discharge Volume high Level Trip cannot be bypassed to reset the scram. When parameters in 2 areas exceed Max Safe values, Emergency Depressurization is performed. (CT)
9	AP08D	I BOP	D ADS SRV Stuck closed

(N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

ES-301-4 Quantitative attributes:
 Total Malfunctions (5-8): **7**
 Malfunction(s) after EOP (1-2): **2**
 Abnormal Events (2-4): **E6 & E7**
 Major Transient(s) /E-Plan entry (1-2): **E8**
 EOPs (1-2): **1300, 1100**
 EOP Contingencies (0-2): **ED**
 Critical Tasks (2-3): **2**

ES-301-5 Quantitative attributes:
 BOP Normal: **E1**
 ATC Reactivity (1 per set): **E2**
 BOP I/C (4 / set): **E6 & 9**
 ATC I/C (4 / set): **E3 & 7**
 SRO-I I/C (4 / set inc 2 as ATC): **E3, 6 & 7**
 SRO Tech Spec (2 per set): **E4 & 5**
 ALL Major Transients (2 per set): **1**

Facility: Monticello Scenario No.: NRC Scenario **4** Op-Test No.: MNGP 2010
 Examiners: _____ Operators: _____

Initial Conditions: 80% Power, after a rod Sequence exchange.
 One Drywell Spray valve inoperable.
 1AR out of Service
 HPCI outage complete
Turnover: Return HPCI to standby readiness.

Event No.	Malf. No.	Event Type*	Event Description
1	None	N BOP	Return HPCI to standby readiness.
2	C-05-B54	(TS-only) SRO	(Optional) Tripped breaker in Y80 to Alternate Shutdown Panel (TS)
3	C-08-B01	C BOP/SRO	An oil leak on T12 requires an emergency transfer to T11. (TS)
4	RR06A	C BOP/SRO	A Recirc Pump trips. BOP performs the actions to secure the Recirc Pump and for Single Loop Ops. (ABN)
5	None	R ATC/SRO	Insert control rods to exit Region 2.
6	RX03	C ATC/SRO	Core Thermal Hydraulic Instability begins. The ATC inserts a manual reactor Scram. (ABN) (CT)
7	03-A166-02 (Ovr)	I ATC	The Low Flow Feed Reg Valve will not open in AUTO during post scram RPV level control. (ABN)
8	MS04B 01-S072-02 (Ovr)	M Crew	A steam leak begins inside the Drywell. EOP 1100 is entered and performed. RPV water level control is complicated by failure of the Low Flow Reg Valve (See Event 7) EOP 1200 is entered. Because the only available Drywell Spray will not function, Drywell air temperature cannot be controlled and Emergency Depressurization is performed. (CT)

(N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

<p><u>ES-301-4 Quantitative attributes:</u> Total Malfunctions (5-8): 6 Malfunction(s) after EOP (1-2): 2 Abnormal Events (2-4): E4, 6, 7 Major Transient(s) /E-Plan entry (1-2): E8 EOPs (1-2): 1200, 1100 EOP Contingencies (0-2):ED Critical Tasks (2-3): 2</p>	<p><u>ES-301-5 Quantitative attributes:</u> BOP Normal: E1 ATC Reactivity (1 per set): E5 BOP I/C (4 / set): E3 & 4 ATC I/C (4 / set): E6 & 7 SRO-I I/C (4 / set inc 2 as ATC): E2, 3, 4, & 6 SRO Tech Spec (2 per set): E2 & 3 ALL Major Transients (2 per set): E8</p>
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Facility: Monticello Scenario No.: NRC Scenario **5** Op-Test No.: MNGP 2010
 Examiners: _____ Operators: _____

Initial Conditions: 89% Power, for Turbine BPV Testing
 Division 2 Drywell Spray valve inoperable.
Turnover: Perform the Turbine BPV Test. Part A

Event No.	Malf. No.	Event Type*	Event Description
1	None	N BOP	(Optional) Perform the Turbine BPV Test (No Faults).
2	None	R ATC/SRO	Raise power with Recirc.
3	02-A11P1-V (Ovrđ)	I ATC/SRO	After a Recirc Speed adjustment, Recirc pump speed continues to increase. The ATC must lock the Scoop Tube to stop the runaway. The Recirc Pump speed mismatch should be verified to be within TS limits. (ABN) (TS)
4	HP01	C BOP/SRO	HPCI inadvertent initiation. (TS) (ABN) (CT) In-Plant personnel report a loud water hammer.
5	EG02A	C BOP/SRO	(Optional) #11 Stator cooling Water Pump Trips. #12 Pump does not auto start but the BOP can manually start it. (ABN)
6	PC05	M Crew	An unisolable Torus leak begins. The first indication of a problem is high water level in the RHR Rooms, which requires entry into EOP 1300. The Torus HI/Low level alarm follows, which requires entry into EOP 1200. When Torus water Level cannot be controlled, The Crew manually scrams and performs Emergency Depressurization. (CT)
7	CH02_119	C ATC/SRO	When the reactor is scrammed, one rod fails to insert. This must be identified by the ATC, who can insert the rod with CRD. Failure to insert the rod will alter the Emergency Depressurization strategy.

(N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

ES-301-4 Quantitative attributes:
 Total Malfunctions (5-8): **5**
 Malfunction(s) after EOP (1-2): **E7**
 Abnormal Events (2-4): **E3, 4, & 5**
 Major Transient(s) /E-Plan entry (1-2): **E6**
 EOPs (1-2): **1200, 1300**
 EOP Contingencies (0-2): **ED**
 Critical Tasks (2-3): **2**

ES-301-5 Quantitative attributes:
 BOP Normal: **E1**
 ATC Reactivity (1 per set): **E2**
 BOP I/C (4 / set): **E4 & 5**
 ATC I/C (4 / set): **E3 & 7**
 SRO-I I/C (4 / set inc 2 as ATC): **E3 & 4**
 SRO Tech Spec (2 per set): **E3 & 4**
 ALL Major Transients (2 per set): **E7**

Facility: Monticello Scenario No.: NRC Scenario **6** (SPARE) Op-Test No.: MNGP 2010
 Examiners: _____ Operators: _____

Initial Conditions: 100%
 Turnover: Secure Torus Cooling

Event No.	Malf. No.	Event Type*	Event Description
1	None	N BOP/SRO	(Optional) Secure Torus Cooling and exit the LCO.
2	C-05-B20 C-05-B04	I ATC/SRO	(Optional) Condenser Vacuum Switch failure with failure to 1/2 Scram (TS)
3	AP01B	C BOP/SRO	SRV B opens and will not reclose.
4	None	R ATC	Rapid Power Reduction for stuck open SRV.
5			
6			
7			
8			

(N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

ES-301-4 Quantitative attributes:
 Total Malfunctions (5-8): **2**
 Malfunction(s) after EOP (1-2): **0**
 Abnormal Events (2-4): **1**
 Major Transient(s) /E-Plan entry (1-2): **0**
 EOPs (1-2): **0**
 EOP Contingencies (0-2): **0**
 Critical Tasks (2-3): **1**

ES-301-5 Quantitative attributes:
 BOP Normal:
 ATC Reactivity (1 per set):
 BOP I/C (4 / set):
 ATC I/C (4 / set):
 SRO-I I/C (4 / set inc 2 as ATC):
 SRO Tech Spec (2 per set):
 ALL Major Transients (2 per set): 1